

Having described the invention, the following is claimed:

1. An electric fuse, comprised of:

a tubular fuse casing formed of an electrically insulating material;
a first conductive component attached to a first end of said casing;
a second conductive component attached to a second end of said casing;

a first conductive path extending through said tube between said first and second conductive components, said first conductive path including a fusible element and having a first resistance; and

a second conductive path extending along the exterior of said tubular fuse casing, said second conductive path being in parallel to said first conductive path, having a second resistance greater than said first resistance and including an indicator component, said indicator component, comprised of:

a first layer providing a visual indication of color;
a second layer including at least one metal layer on said first layer, said second layer having a region of increased resistance;

a cavity located above said region of increased resistance; and
a third layer comprised of a transparent polymeric material covering said cavity and said first and second layers.

2. An electric fuse as defined in claim 1, wherein said first layer and said second layer of said indicator are elongated strips that extend along said tubular fuse casing, with said second layer being electrically connected to said first and second conductive components.

3. An electric fuse as defined in claim 2, wherein said third layer is dimensioned to wrap around said tubular fuse casing.

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4. An electric fuse as defined in claim 3, wherein said second layer includes at least one metal layer that is vapor deposited on said first layer.

5. An electric fuse as defined in claim 4, wherein said region of increased resistance is formed by a reduction in the cross-sectional area of said second layer.

6. An electric fuse as defined in claim 5, wherein said region of increased resistance is comprised of an area of reduced thickness.

7. An electric fuse as defined in claim 6, wherein said cavity above said region of increased resistance is defined by said area of reduced thickness.

8. An electric fuse as defined in claim 5 further comprising a fourth layer of a polymeric material disposed between said second layer and said third layer, said fourth layer having an opening therethrough in registry with said region of increased resistance of said second layer, wherein said opening in said fourth layer forms said cavity.

9. An electric fuse as defined in claim 8, wherein an adhesive secures said first layer to said tubular fuse casing.

10. An electric fuse, comprised of:
a tubular fuse casing formed of an electrically insulating material;
a first conductive component attached to a first end of said casing;
a second conductive component attached to a second end of said casing;

a first conductive path extending through said tube between said first and second conductive components, said first conductive path including a fusible element and having a first resistance;

an indicator strip extending along the length of said tubular fuse casing, said indicator strip comprised of a first indicator layer having a conductive layer of

metal thereon, said conductive layer being electrically connected to said first and said second conductive components to be in parallel with said first conductive path, said conductive layer having a second resistance greater than said first resistance and having a region of increased resistance wherein the resistance of said region is greater than said second resistance;

a cover layer of polymeric material covering said indicator strip, said cover layer being clear in the vicinity of said region, wherein said region is visible through said cover layer; and

a cavity formed between said cover layer and said metal layer, said cavity disposed contiguous to said region and being dimensioned to promote vaporization of said metal at said region to expose said indicator layer when a fault condition exists along said first conductive path.

11. An electric fuse as defined in claim 10, wherein said cavity is formed by a recess in said metal layer.

12. An electric fuse as defined in claim 10, wherein an intermediate layer of polymer is disposed between said cover layer and said metal layer, said intermediate layer having an opening therein, said opening being in registry with said *increased resistance* region of ~~reduced cross-sectional~~ area in said metal layer, wherein said cavity is defined by said opening.

A 13. An electric fuse as defined in claim 12, wherein said region is defined by an area of reduced cross-sectional area in said conductive layer.

14. An electric fuse, comprised of:

a tubular casing formed of an electrically insulating material;

a first conductive component attached to a first end of said casing;

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a second conductive component attached to a second end of said casing;

a fusible element within said casing electrically connected to said first and second conductive components, said first fusible element having a first resistance;

an indicator on said casing, said indicator, comprised of:

a first layer comprised of a non-flammable, dyed material; and

a second layer comprised of a conductive material deposited on said first layer, said second layer having an area of reduced thickness and a predetermined resistance greater than the resistance of said fusible element, said indicator mounted to said casing with said second layer electrically connected to said first and second conductive elements in parallel with said fusible element and with said first layer of dyed material between said second layer and said casing; and

a third layer of a clear, polymeric material covering said indicator and at least a portion of said casing wherein said area of reduced thickness of said second layer is visible through said third layer;

said second layer of conductive material dimensioned to vaporize and expose a portion of said first layer when said fusible element experiences a fault condition that eliminates the electrical connection between said first and second conductive elements, said indicator providing a first visual indication when said fault condition results from a short circuit and a second visual indication when said fault condition results from an over current fault condition.

15. An electric fuse as defined in claim 14, wherein said first visual indication is a first area of said first layer being exposed, and said second visual indication is a second area of said first layer being exposed, said second area being noticeably smaller than said first area.

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